



Building 51 and Bevatron Demolition Project Overview & Seismic Summary

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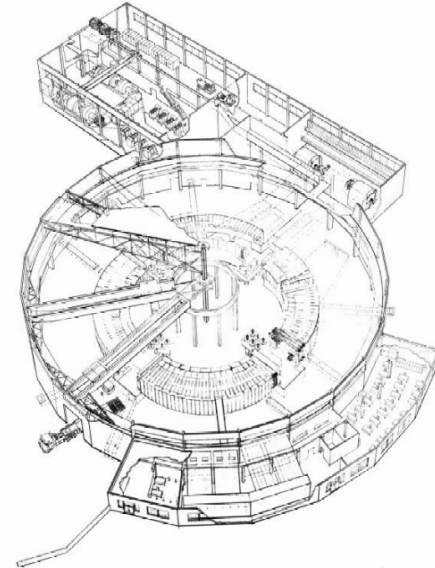
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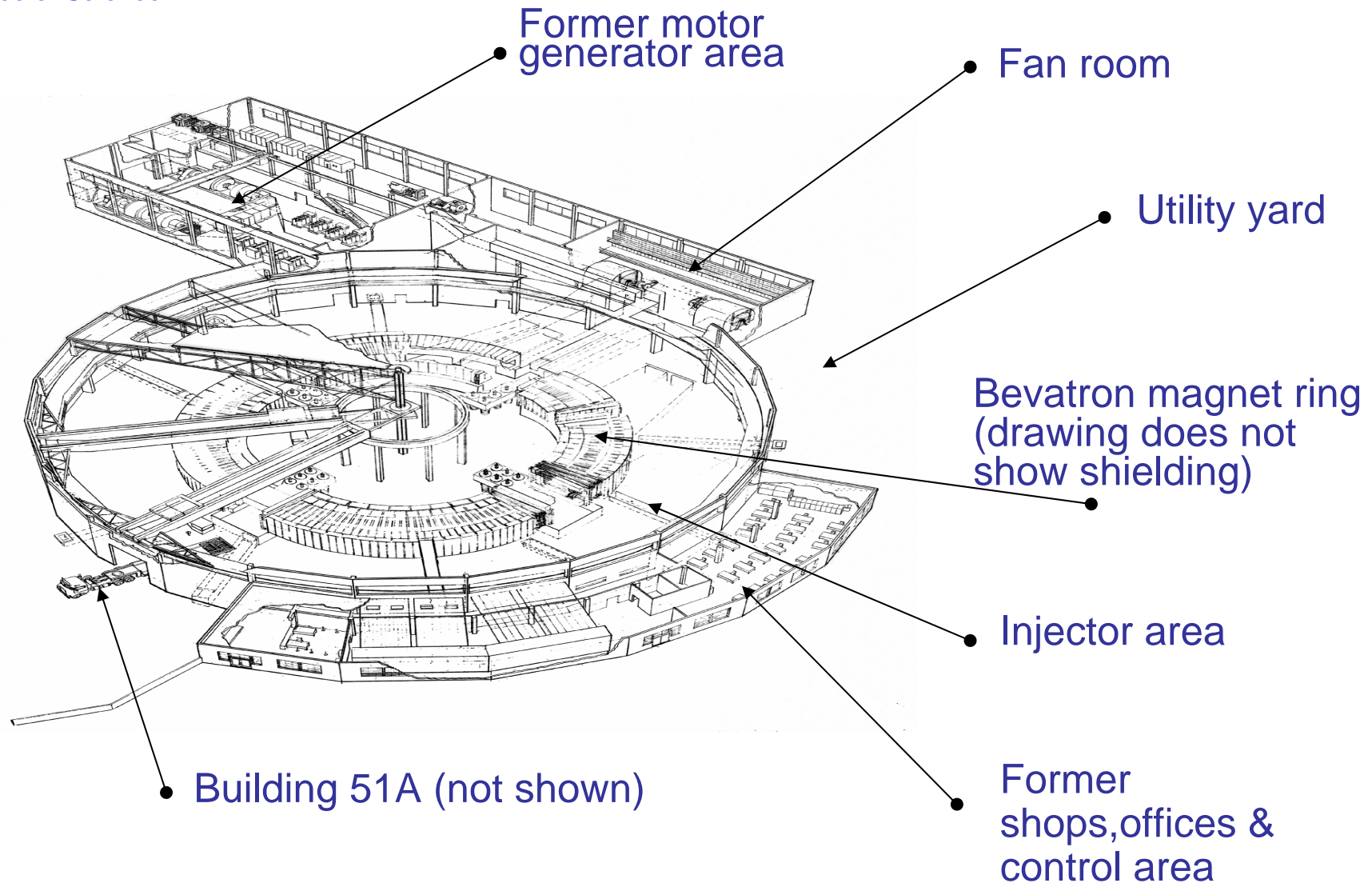
What is Building 51? & What was the Bevatron?



- ❑ A large, shed-like structure intended to provide weather protection for the Bevatron.
- ❑ Fire life safety code non-compliant.
- ❑ Seismic risk.
- ❑ Made with materials now considered hazardous.
- ❑ Major roof leaks.
- ❑ Large, weak-focusing synchrotron accelerator
- ❑ Started operation in 1954, ended in 1993.
- ❑ Approximately 180' diameter.
- ❑ 11,000 tons of steel and metals.
- ❑ 20,000 tons of concrete shielding blocks encircling the accelerator.



Reference Diagram Building 51





Bevatron Deconstruction To Date: A Brief History



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In the 1990's:

- **1992:** Bevatron's last experimental run.
- **1993:** D&D Plan estimated cost at \$75M.
 - Minimal information on activation.
 - All activated material planned for Hanford burial.
- **1994:** Bevatron placed in stand-down, waiting for funding for deconstruction.
- **1996:** Blocks to Brookhaven.
- **Late 90's:** Blocks & Steel to Oak Ridge.

In the 2000's:

- **2002:** \$4.0 million
 - \$2.5 DOE SC Excess Facilities (operating funds).
 - \$1.5 Berkeley Lab – (overhead-noncap).
- **2003:** \$3.6 million
 - \$2.45 DOE SC Excess Facilities (operating funds).
 - \$1.2 Berkeley Lab – (overhead-noncap).
- **2004:** \$1.64 million
 - \$1.5 DOE SC Excess Facilities (operating funds).
 - \$154k Berkeley Lab – (overhead)
- **2005:** \$1.36 million
 - \$1.36 DOE SC Excess Facilities (operating funds).

NOW: Planning for the Future (\$83M).
CD0 Approved August 2004.



Project Scope



- ❑ Protection of adjacent buildings and protection of laboratory site roads to ensure continued general operations.
- ❑ Isolation of utility systems feeding the structures to be demolished. Reroute utilities serving other buildings.
- ❑ Dismantle, characterize and remove the accelerator shielding blocks. Appropriately dispose of all materials including low level radioactive waste, mixed waste, hazardous waste and debris. Low level radioactive and mixed waste slated for Envirocare
- ❑ Demolition of the building, including slab and foundation.
- ❑ Tests for soil contamination.
- ❑ Backfill open area, compact to grade and hydroseed.

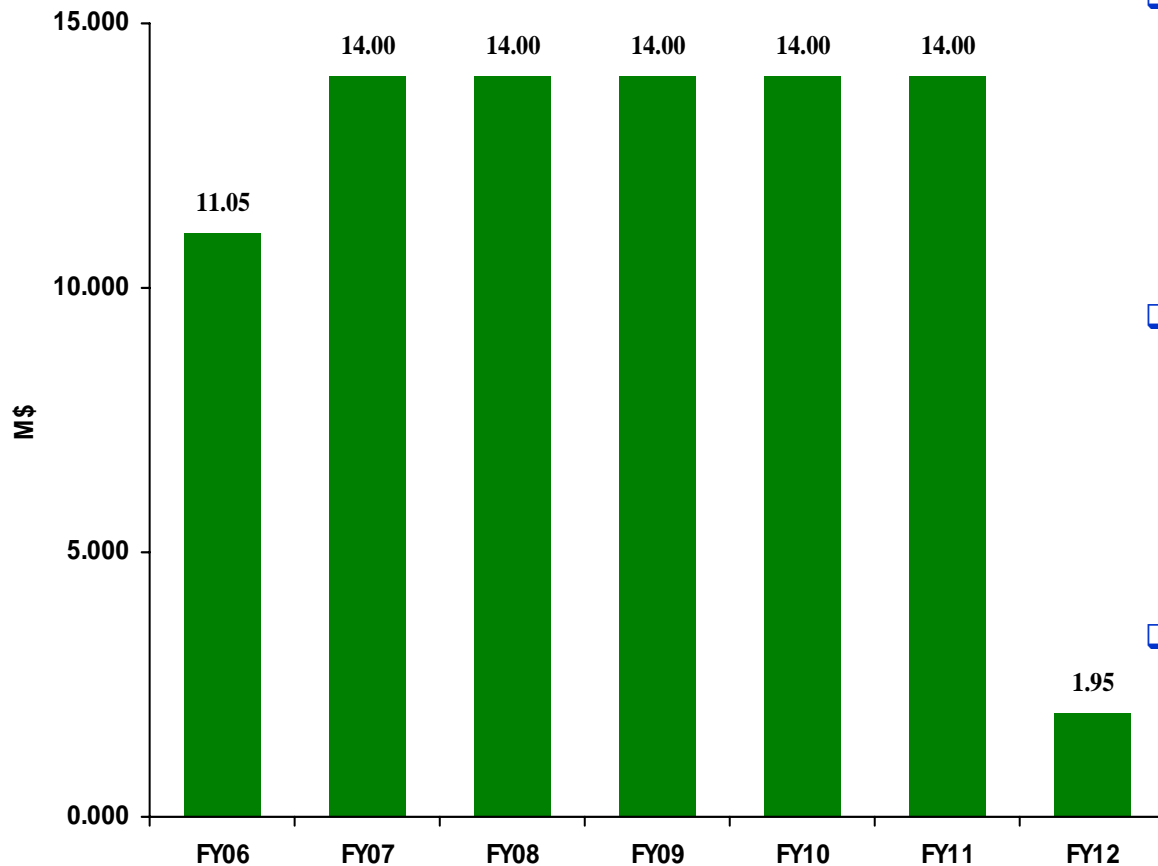


Funding Profile / Project Benefits



Operating Funds

Total Estimated Cost \$83.0 M



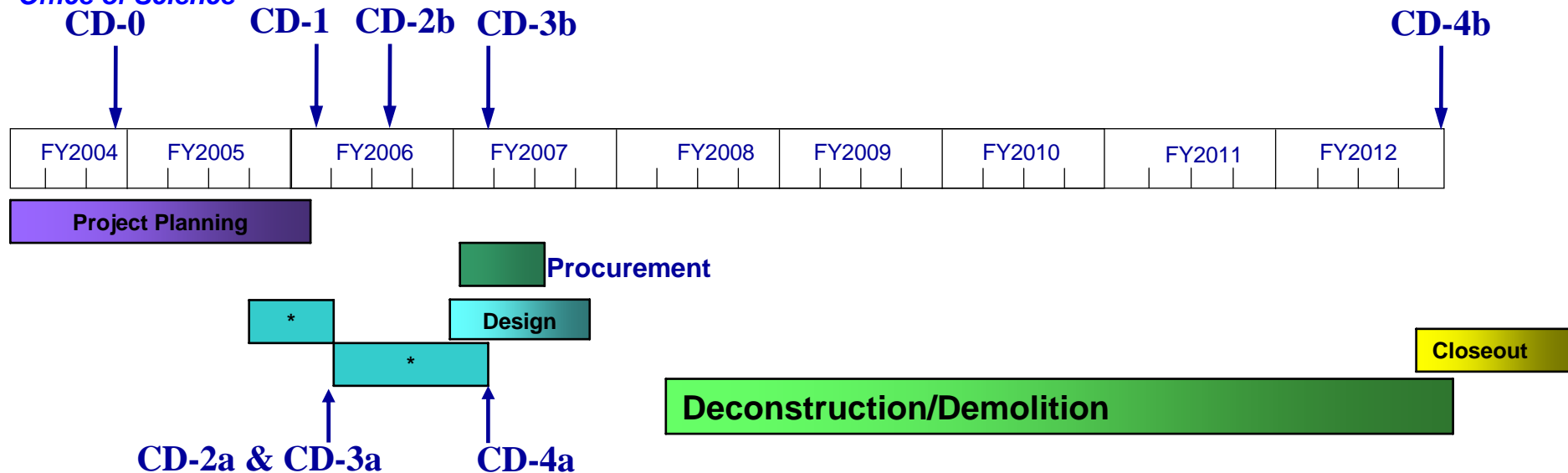
- ❑ Remove the largest underutilized building at LBNL from the excess facilities space inventory.
- ❑ Remove potential hazards posed by the existing structure and the abandoned accelerator.
- ❑ Make the Building 51 site available for future reuse.



Preliminary Project Schedule



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Critical Decision 0 – Mission Need

08-2004

Critical Decision 1 – Approve Alternative Selection & Cost Range

11/12-2005

Critical Decision 2a & 3a – Shield Block Removal

11/12-2005

Critical Decision 2b – Performance Baseline

08-2006

Critical Decision 3b – Start Demolition

02-2008

Critical Decision 4a – Shield Block Removal Project Closeout

01-2007

Critical Decision 4b – Start Project Closeout

08-2012



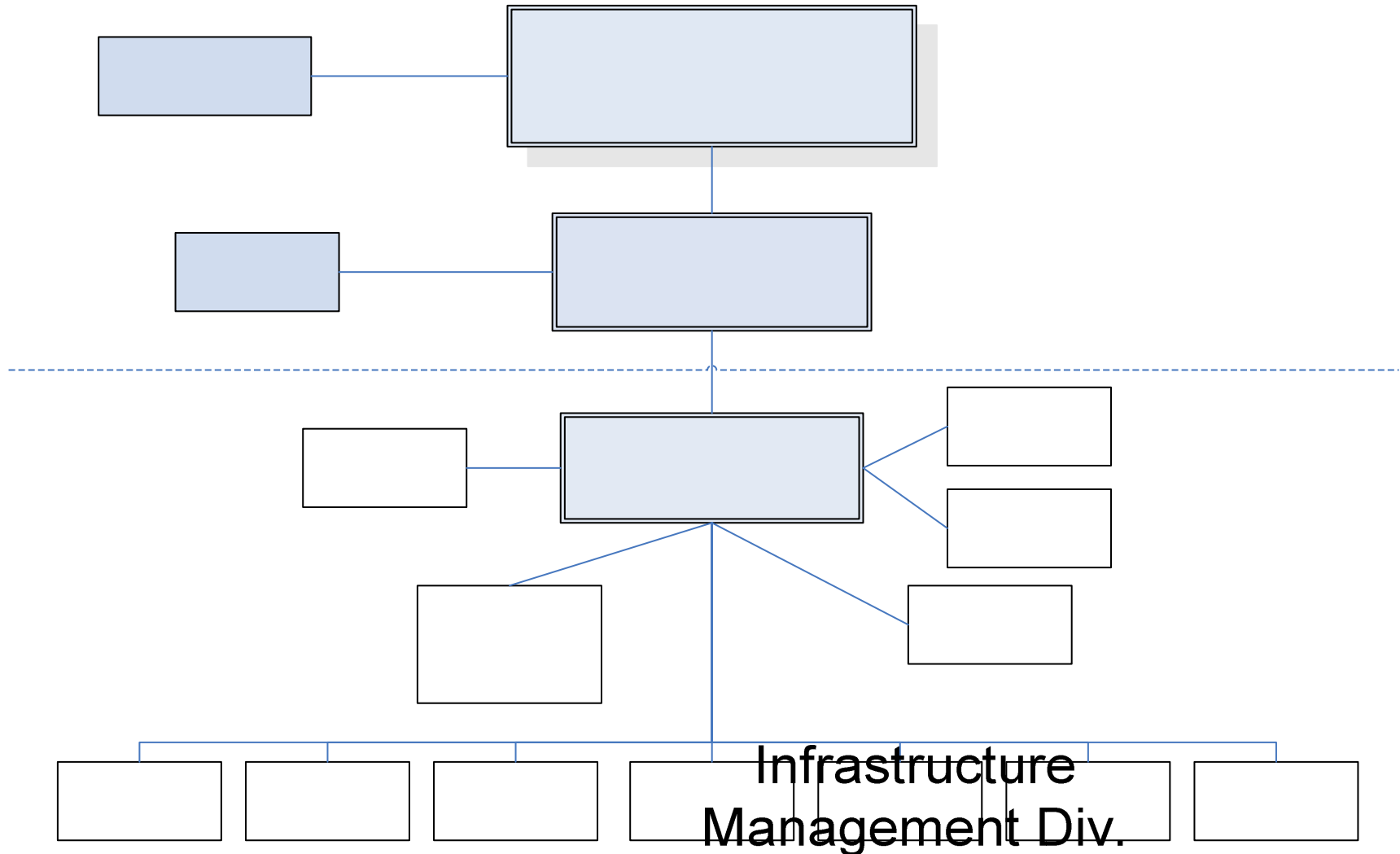
Project Management Systems



- Federal Project Director controls project through change control thresholds per approved Project Execution Plan, monthly reports and regular project review meetings. Reports progress in PARS and presents formally to HQ each quarter.
- LBNL Project Director uses written procedures to manage the project. The project will conform to a tailored DOE Order 413.3 approach. Support is provided by Facilities, Procurement, safety, quality assurance, and EH&S staff.



Integrated Project Team



D. Michlewicz (SC-31.2)



Risk Assessment



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- **Technical Risk Assessment: Moderate** for Building Demolition Project:
 - Hazardous Materials (lead, asbestos, mercury, low-level rad).
 - Working in confined site.
 - Landfill space availability.
 - Personnel Safety.
- **Schedule Risk: Moderate**
 - Funding availability each fiscal year (continuing resolutions, recessions).
 - Unforeseeable shipping or transport constraints in out years.
 - Coordination of demolition with ongoing operations.
 - Delay from environmental approval or community concerns.
- **Cost Risk: Moderate**
 - Project contingency established from the latest cost method guidelines and analysis of the project uncertainties by the project team.
 - Market conditions for subcontractors and fuel prices may become volatile.
 - Unforeseeable regulatory change in the out years.
 - Level & exact extent of contaminants in inaccessible areas unknowable until significant disassembly has already taken place.
- **Environmental Risk: Moderate**
 - Project is not expected to impact environmentally sensitive areas.
 - Subsurface conditions do not pose exposure concerns. Appropriate mitigation measures will be implemented.
 - Community concerns.
 - Noise and traffic impacts.
 - Historic structure demolition.



Project Status - May 2005



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- ❑ Critical Decision 0 approval received August 2004.

- ❑ CD1 (plus early– start block removal CD2a & CD3a) expected by 11/05.

- ❑ LBNL pursuing option to use Envirocare for disposal of Low Level Radiological & Mixed Waste.

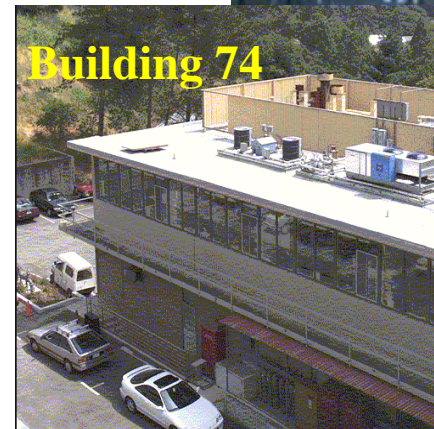
- ❑ LBNL is preparing the following:
 - Environmental Documents: (EA, CEQA)
 - Conceptual Design Report (CDR)
 - Acquisition Strategy (AS)
 - Critical Decision 1 – Documents
 - Preliminary Hazards Analysis



Seismic Event Threatens Research in 18 Buildings Constructed 1944 to 1964



- ❑ New seismic safety analysis indicates structural problems with some older buildings
- ❑ Approximately 50% of buildings fully characterized; 18 problem buildings
 - Demolition required for three buildings (10, 25, 50D) **Cost: conceptual est. ~\$5+M**
 - LIP rehabilitation needed for three buildings (6, 50, 74) **Cost: ~\$23M**
 - GPP rehabilitation needed for eight buildings (25A, 46, 48, 54, 64, 71, 72, 76) **Cost: ~\$20M**
 - Limit use of four small buildings (17, 44, 50C, 71A)
- ❑ System and space modernization costs are not included.
- ❑ Characterization of all buildings to be completed in FY 2007

**Building 71****Building 25****Building 74****Building 6**